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ABSTRACT

Data from the public health field indicate a shift in emphasis from treatment models to wellness models which focus on individuals' health and how to maintain it. Similarly, school psychologists can enhance and maintain students' competence, thereby reducing the need for remediation. This would create a new role for psychologists in the schools, a specialty in educational school psychology. An educational school psychologist would strive to build students' competence by educating school personnel about research developments which can improve student competence, by implementing intervention approaches, and by conducting research and evaluation to determine the effectiveness of interventions and to generate and expand knowledge. Specific examples of these functions for the educational school psychologist include: (1) educating teachers about research findings which relate teacher practices to student achievement; (2) offering in-service training to teachers on behavior modification techniques which have been found to be effective in improving student achievement and behavior; (3) developing school materials in accord with instructional system design; (4) helping teachers prepare adjunct questions for text materials and teaching students metacognitive strategies to improve reading comprehension; (5) demonstrating to teachers the usefulness of criterion referenced tests; (6) developing programs of computer-assisted instruction; and (7) conducting study skills training programs and test anxiety reduction training programs for students. These activities are samples only. Continuing research will modify and expand these functions and more effective interventions will be developed. The vital functions for the educational school psychologist are to train others in order to have the important multiplier effect, and to keep abreast of new developments as they occur. A five-page list of references concludes the document. (NRB)

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Implications of Wellness Models for Educational and School Psychology

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Abstract

This paper discusses some problems with health treatment models, and the importance of conceptualizing concerns about health from a "wellness" model perspective. The implications of wellness models for psychologists working in the schools are then discussed. Finally, a specialty of educational school psychologist is suggested whose function would be to assist the school by educating competent youngsters rather than conduct remediation, treatment, or individual evaluation programs. Some examples are described of functions such psychologists could perform in the schools, including the following: Implementing behavior modification procedures, training teachers in direct instruction techniques and in procedures facilitating student's reading comprehension, conducting test anxiety reduction and study skills training programs, and others. Some general characteristics of such roles are also discussed.

Implications of Wellness Models for Educational and School Psychology

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It may come as a surprise to some that the innovation with the greatest impact on public health was not any type of medical treatment involving new technology, nor wonder drugs, nor surgery; instead, it was the purification of the water supply (McKeown, 1980). Such purification, of course, prevented many illnesses from developing and obviated the necessity for treatment. A further surprise may be the finding (Backstrand, 1980) that when a new medical treatment facility was opened its resources were typically absorbed within three years and the percentage of the population reporting itself as underserved remained unchanged. These data demonstrate dramatically the futility of thinking in terms of treatment models in public health and the importance of shifting to a health maintenance, or prevention perspective. The purpose of this paper is to extend these conceptions to the roles exercised by psychologists in the schools by suggesting techniques that may be used to enhance the competence of students and their health, broadly conceived, in order to reduce the need for educational or psychological remediation or special treatment.

The Surgeon General's report (Department of Health, Education &

Welfare (HEW), 1979) cited some sobering statistics about the United States' health budget. Although only four percent of the budget is allocated for prevention "it is clear that improvement in the health status of our citizens will not be made predominantly through the treatment of disease but rather through its prevention. This is recognized in the growing consensus about the need for, and value of, disease prevention and health promotion "(p. 9). The report cites evidence for the importance of prevention from several studies which analyze the 10 leading causes of death. The findings indicate that 20% of the causes of death could be attributed to human biological factors, 20% to environmental factors and only 10% to inadequate health care, and the remaining 50% of the deaths were due to unhealthy behavior or lifestyles. Clearly, effective health maintenance or prevention programs could have reduced these deaths enormously.

"Wellness" models are based on an even more positive rationale than prevention models. Rather than emphasizing treatment or even prevention of illness, wellness models focus on individuals' health and what can be done to maintain it, and are staffed by allied health personnel supported by technological equipment (Goldbeck, 1980; HEW, 1978;Equitable, undated). Individuals are tested on a variety of physiological indices and a computerized health hazard appraisal is made. After consultation with a health educator, prescriptions regarding diet, exercise, prevention of substance abuse, tension reduction, and similar activities are made in order to maintain the individual's state of wellness and enhance it. Periodic re-examinations monitor progress. Of course, if any indications of

illness are found a referral for medical attention is arranged.

Medical estimates are that up to 60% (Goldbeck, 1980) of the services rendered by physicians are from individuals who can be called the "worried well" (Garfield, 1979). That is, these are individuals who suffer from no known organic disorder, yet experience various symptoms which can be attributed to tension, anxiety, substance abuse, or poor health habits. Even though such patients absorb a great proportion of medical resources, and contribute substantially to increased health costs, it is ironic that they generally experience little relief from conventional treatment (Garfield, 1979; Goldbeck, 1980). Apparently treatment does little to ameliorate the anxiety, tension and poor health habits which may contribute to the concerns of this group. Thus, they return repeatedly to find one, or another, or yet another treatment--none of which are likely to improve their condition markedly.

Advocates of the wellness model hypothesize (Goldbeck, 1980; HEW, 1978) that being served in such a center is likely to be more beneficial to the "worried well" than traditional treatment. It is reasoned (Goldbeck, 1980; HEW, 1978) that recommendations made by wellness programs such as suggesting improved nutrition, reducing substance abuse, or becoming involved in exercise, meditation, or tension reduction programs are more likely to make these individuals feel better, or improve their appearance and perception of themselves--than traditional medical treatment. Even if we assume that the outcomes of such efforts are no different from traditional treatment modalities, they are certainly <u>no less effective,</u> and

enormously less expensive. An estimate is that serving an individual in a wellness center may cost only one tenth as much as treatment in a medical clinic (Equitable, undated). Psychologists who serve the public in human service roles would be wise to investigate participation in such centers, as would psychologists who identify themselves as evaluators or as researchers in human service areas.

There are, of course, similar examples of the comparative ineffectiveness of educational remediation compared to effective initial instruction. It is well known, for example, that students receiving remedial reading for a year are unlikely to increase their reading ability by a full year (Spreen, 1982). Such findings are perfectly reasonable because while studens receiving remediation catch up other students are not standing still; instead they are mastering new skills which those receiving remediation will still have to master. This implies, of course, that even those students receiving highly succesful remedial instruction are most likely to fall further and further behind their peers. Obviously, it is wisest to maximize efforts and resources in effective initial instruction, rather than in remediation.

These considerations have important implications for the functions of psychologists in the schools. Psychologists can perform critically important roles in maintaining, and improving students' competence and effectiveness, rather than merely remediating or treating them for disabilities of one kind or another. To return to the public health example cited above, an educational analog to the purification of the water supply is needed to help students stay competent rather than

fall behind. A number of functions intended to help accomplish these objectives will be described below. While these may not be as powerful as purifying the water supply, perhaps they can be an educational analog to fluoridation. In addition, to borrow directly from the wellness model, psychologists could implement programs emphasizing nutrition, prevention of substance abuse, as well as exercise and tension reduction which would, hopefully, improve yet further the instructional interventions to be described below.

It should be noted that the functions to be suggested describe a new role for psychologists in the schools, which is best described by the term <u>educational school psychology</u>. This specialty is similar to that advocated by Berliner (1983), who called it educational clinical psychology. School psychologists will find these suggestions similar to those advocated by Bardon (1983a, 1983b) and by Rosenfield (1984). For traditionally trained educational psychologists being placed in elementary or secondary schools is a dramatic departure from the college and university environments in which they have largely functioned. School psychologists, on the other hand, are accustomed to working in schools in psychometric and counseling roles, and may find some of these other functions quite new.

In agreement with Levy (1984) it would seem most useful from a wellness perspective if psychologists in general, and educational school psychologists in particular would take competence building as their major function. The principal roles educational school psychologists could discharge to such an end can be described as: 1) Educating the faculty and administration regarding research

developments which can improve the competence of students. 2) Implementing intervention approaches. 3) Conducting research and evaluation to serve two goals: a) Determining the effectiveness of such intervention programs, and b) generating and examining knowledge. There are presently few paying positions for these roles. It is expected that if school administrators, curriculum coordinators, directors of evaluation, and related personnel receive training to conduct the programs outlined below they would be in an ideal position to discharge some of the functions described and create more positions for similarly trained personnel.

Direct Instruction

A substantial body of replicated research relating teacher practices to student achievement has accumulated in the last few years (Rosenshine, 1983; Brophy, 1979). Much of this research is fairly new and very little of it has been disseminated in teacher education programs, or via in-service training. This is unfortunate since the research has identified and replicated some teacher practices that consistently lead to increases in student achievement. Some of these findings are counter-intuitive making it all the more important for teachers to be aware of this literature. For example, Anderson, Evertson, and Brophy (1979) found that calling on students according to some regular pattern led to superior achievement compared to calling on volunteers or selecting students a random.

As suggested by Berliner (1983) and by Rosenfield (1984) one important role for educational school psychologists would be to

educate teachers in these developments. Psychologists should conduct in-service seminars and workshops regarding these practices on a continuing basis, rather than merely lecturing about them. Classrooms should be monitored frequently and feedback to teachers provided regarding their practices. Since the specifics of this function were described in some detail by Berliner (1983; in press), and by Rosenfield (1984) there is little need for repeating them here.

Behavior Modification

Much research has accumulated indicating that procedures such as token economies, systematic reinforcement of behavior, and preventing the inadvertent reinforcement of behaviors not related to the objectives of the school can significantly improve student achievement, discipline, and classroom environments in general. These practices have been verified in many investigations (Barton, 1982; Lahey & Drabman, 1981; Kazdin, 1977) and are the subject of a large, widely available literature.

Behavior modification techniques should certainly be used more widely by teachers than they appear to be at present. As with direct instruction, educational school psychologists may have to conduct in-service training regarding some of these procedures on a continuous basis. Again, as indicated above, such instruction should not merely be school based, but should be implemented in a regular program of visiting teachers classrooms', observing their rewarding activities, and providing feedback and suggestions regarding procedures research has shown to be effective.

Instructional System Design

A good deal of research has accumulated indicating that if instructional materials are designed in accord with a series of practices identified as instructional systems design (ISD), improvement in achievement can be expected (Merrill, Kowalis, & Wilson, 1980; Montague, Ellis, & Wulfeck, 1981). ISD includes such procedures as having clearly specified instructional objectives, sharing these with students, designing instruction to master the objectives, and developing formative and summative evaluation instruments to monitor the degree to which the objectives have been mastered. ISD procedures also involve specifying criteria for the attainment of competence, and developing formative evaluation instruments which permit students to loop back for an additional cycle if the instructional objectives have not been attained. Scales such as the Instructional Quality Inventory (Wulfeck, Ellis, Richards, Wood, & Merrill, 1978) provide a checklist permitting evaluation of the quality of instructional materials and the degree to which ISD procedures have been systematically followed in their development.

Educational school psychologists should participate as consultants in the development of instructional materials to suggest that ISD procedures are followed. Furthermore, they could also assume a role in evaluating whether the materials acquired by schools follow the principles described above, and suggest that newly acquired materials conform to ISD principles.

Improving Comprehension

If students graduate from school and have poor comprehension of what they read their future is likely to be dim. Advancement in society at any level demands being able to comprehend what is read. Improving the comprehension of students is, therefore, an important aim at all educational levels. A case can be made for the proposition that reading comprehension is one of the major objectives of education at the primary level. Poor comprehension inevitably leads to a cycle of increasing and deepening failure at later school levels since students with poor comprehension will, obviously, do poorly in all academic fields (Beaugrande, 1984; Mason, 1984; Spreen, 1982). The facilitation of comprehension is, then, a critically important objective. Two areas of research in the educational psychology literature bear directly on improving comprehension, and suggest avenues by which educational school psychologists can have an important impact on students' comprehension. These areas are the use of adjunct questions and metacognitive training.

Adjunct questions. A substantial amount of research, reviewed by R.C. Anderson and Biddle (1975), and by others (Tierney & Cunningham, 1984) indicates that providing students with questions about what they have read improves the recall and comprehension of material related to the questions. While there are qualifications about this research, such as the placement of questions (Frase, 1968), their abstractness, and the degree to which they are literal or paraphrased repetitions of the text on which they are based (R.C. Anderson, 1972), the generalization that adjunct questions facilitate

learning the material related to the question is remarkably robust (T.H. Anderson, 1980; Andre, 1979; Friedman & Rickards, 1981; Rothkopf and Bibiscos, 1967).

Educational school psychologists could instruct teachers in the preparation of questions for text materials to be read by students. These questions could be about homework, assigned readings, or any other material. Preparing such questions for the most important content is one relatively easy way by which recall and comprehension of this subject matter in can be facilitated.

Metacognition. Metacognition refers to the individual's monitoring of knowledge gathering activities (Flavell, 1979; Baker & Brown, 1984; Brown, 1980). In the area of reading comprehension metacogniton refers to students' ability to monitor how well they understand what was read. A substantial amount of research has indicated that poor readers and younger readers may not have effective metacognitive strategies to monitor their own comprehension (Brown, 1980; Brown, Armbruster & Baker, in press; Garner & Kraus, 1981-1982; Markman, 1977).

Recent research (Brown, Palinscar & Armbruster, 1984; Hansen, 1981; Palinscar & Brown, 1984) has indicated that it is possible to teach students some relatively simple metacognitive strategies to improve their comprehension. Furthermore, there is some evidence that such training generalizes to other tasks (Stevens, 1984). This is clearly an area where educational school psychologists could do a great deal to help teachers instruct students in appropriate

metacognitive strategies and thus improve their reading comprehension.

Evaluation

Virtually all schools employ some achievement measures. Most often these are likely to be norm referenced tests whose major purpose is to compare the achievement of students to that of a standardization group. These tests provide important information for educational administrators at the federal, state, and local levels. They are, however, of limited utility for the instructional decisions teachers have to make. Nevertheless, teachers routinely describe students in terms of norm referenced test scores and are most likely to use grade equivalent norms, despite their well-known limitations.

Even though norm referenced tests are used most frequently in the schools, they are of little help for instructional purposes because such tests, generally do not specify the skills students have mastered, and which skills must still be taught. Such information, of course, is obtained from criterion referenced (Popham, 1981; Berk, 1980) or from diagnostic tests which, instead of comparing students to a norm group, attempt to determine students' mastery of particular objectives or skills. Recently, some widely used norm referenced tests, such as the California Acievement battery (1978) for example, have attempted to serve both purposes. That is, in addition to comparing students to a norm group, test items are clustered by areas, and results for each area provided to teachers. Despite this improvement teachers tend to emphasize students' grade equivalent scores, rather than criterion referenced information. It is true that

many undergraduate and graduate educational psychology courses stress the limitations of norm referenced tests, and the various norms derived from them. Nevertheless, visitors to any school will find teachers who can describe students' grade equivalent scores in most areas but have a much hazier notion regarding the objectives mastered by students and those which require further work.

Educational school psychologists could work with teachers to deemphasize their reliance on norm referenced measures and demonstrate the usefulness of comparable criterion referenced tests. Rather than merely instructing teachers (such instruction has obviously has had little success despite being covered in most educational psychology courses), workshops devoted to discussions of real students, and demonstrations of the advantages and weaknesses of the two types of scores can more vividly be conducted in the schools than in graduate or undergraduate courses, and hopefully reduce teachers' reliance on criterion referenced measures that are virtually useless for instructional decisions.

Computer Assisted Instruction

The microcomputer boom in the society at large is well documented, as is the related boom for using computers in schools. What is less widely known, however, is that computers are often used in a rigid, pedantic and unimaginative way in most schools. Becker (1983) has indicated that drill and practice (e.g., drilling students on mathematical computation) is the predominat mode in which computer assisted instrution (CAI) occurs in the schools, and that computer

literacy and computer programming (mainly BASIC and/or LOGO) are the content areas most frequently taught by computers in most schools. Computers are rarely utilized in more sophisticated modes such as simulation, nor is there much use of word processing so that students can learn that writing and making revisions can be a relatively painless process.

A good deal of research (Shavelson, 1984) has indicated that there are very few teachers with substantial computer skills to enlighten the faculty regarding such uses. Furthermore, it has been indicated (Tobias, in press) that teachers who are relatively sophisticated about CAI may be proficient at devising drill and practice materials which, often, do little more than display multiple choice tests on microcomputers. Thus, even the tiny percentage of teachers who are knowledgeable about computers may know little about the imaginative CAI applications. There is considerable doubt (Bork, 1982) regarding the utility of teaching students BASIC, the predominant computer language taught in the schools. The prevalence of instruction in BASIC, and use of drill and practice is, probably, doing little to improve the effectiveness of the schools, though administrators can point with pride at students busily working away on computer equipment when parents visit the schools.

It is clear that an important and overlooked specialty in the schools is to instruct teachers in more imaginative CAI modes including tutorial and simulation programs, and to introduce them to computer managed instruction. Furthermore, the importance of integrating computers into the total curriculum delivery system is an

overlooked concern. School visits often indicate that students' work on computers is not reported back to the teacher, and, therefore, not integrated into the curriculum (Tobias, in press). Clearly, there is an important role for psychologists with training in both instructional design and CAI who might enlarge the perspectives of school personnel to the more imaginative roles that can be discharged with computers.

Test Anxiety Reduction and Study Skills Training

A good deal of research (Allen, Elias & Zlotlow, 1980) has indicated that a variety of easily administered test anxiety reduction techniques reduce the fear of evaluation so prevalent in schools. Hill (1984) has estimated that a large percentage of students suffer severe anxiety regarding evaluation and has demonstrated that some easily implemented procedures may reduce the debilitating effect of test anxiety. Similarly, Sarason (in press) has indicated that relatively simple directions to students can go a long way towards reducing the debilitating effect of test anxiety on performance.

Research findings of reductions in self reports of anxiety (Allen et al, 1980; Denney, 1980) are not necessarily accompanied by improvements in cognitive performance. Recently a number of researchers have suggested (Kirkland & Hollandsworth, 1979, 1980; Culler & Holahan, 1980) that what appears to be interference by test anxiety in the retrieval of prior learning, may actually reflect less thorough initial mastery of the material due to defective study or test taking skills. It has recently been suggested (Tobias, 1984)

that the effects of both test anxiety and study skills can be conceptualized as complementary in that the cognitive representation of test anxiety absorbs some portion of students' cognitive capacity leaving less available capacity to devote to task demands. Similarly, good study or test taking skills may reduce the cognitive demands of tasks, and hence, enable students with sound study skills to function more effectively since less cognitive capacity is required for learning. Thus, while it is presently unclear whether test anxiety reduction, or study skills training programs are most effective in improving students' performance, a reasonable interpretation of the evidence presently available is that both approaches are important in improving student performance.

Clearly this is an important area of impact for educational school psychologists. Study skills training programs (Weinstein, 1983; Dansereau, 1984; McKeachie, 1984) have shown that school performance can be improved by study skills training programs. As indicated above, test anxiety reduction programs have been shown to decrease student's reported fear of evaluation. It is also clear that the current intense activity in this field will lead to more effective intervention strategies in the near future. While the specific type of applications in this area are presently somewhat vague, more effective intervention strategies are likely to be clear within the next few years and form another important area for intervention by educational school psychologists.

Conclusion

A number of functions have been listed that could be exercised by appropriately trained educational school psychologists to maintain and enhance students' competence and well being. These functions should be considered neither exhaustive, nor permanent. There are many other ways to accomplish similar objectives. At best, the few activities outlined above should be considered samples of a much larger array.

There is every reason to believe that the functions described above and others are likely to change considerably. There are two basic reasons for anticipating such changes: 1) Continuing research is likely to modify the implications of some of the procedures suggested above, change others, and develop new, more powerful and more effective interventions which may well replace some of those outlined above. 2) It is hoped that as educational school psychologists have educated the school community regarding some of these functions, other school personnel can help by assuming some of the various training and educational roles outlined above. It should be noted that it is vital for school psychologists to train other school personnel in these functions in order to have the important "multiplier effect," so that they in turn, train yet others. In that way a relatively small group of educational school psychologists can have a very large impact.

The roles sketched above have important implications for the training of educational school psychologists. First of all, it is recognized that not every educational school psychologist can be equally competent in varied areas such as instructional systems design, test anxiety reduction, or metacognition. Clearly, some

psychologists will have greater specializations in some of these areas than others. As such roles and, hopefully, positions multiply, psychologists can share their competence so that schools may be served in a variety of these areas. Second, the descriptions of these roles demand that such individuals have an advanced level of professional training in order to be able to keep up with continuing changes in the field. These roles are dynamic in the sense that they have to mediate between the demands for solutions to very real problems in the schools on the one hand, and a continually changing body of knowledge which varies in the amount of confidence to be invested in different findings. Educational school psychologists, then, will have to be those individuals in the schools who actively monitor new developments in the field and conduct local research to determine the suitability of various techniques for their particular environment, much as suggested by Cronbach (1975). They should be encouraged to avail themselves of continuing education workshops conducted by professional associations so that the school community can be assured of having individuals knowledgable about state of the art developments as interface agents between the development of knowledge on the one hand and its application in the particular school on the other.

Finally, such educational school psychologists will probably need some training in human relations techniques, conflict resolution, and group procedures to effectively discharge their various roles. To be maximally effective, these roles demand good relationships with all segments of the school community to both encourage change in present procedures and to help instruct other individuals in these functions. As Lambert (1983) suggested, supervision in the implementation of

these procedures may well be critical, as will be interpersonal sensitivity and tact to discharge these roles effectively.

While the demands for the roles outlined above seem quite considerable, the rewards to be experienced in discharging them may be equally substantial. Unlike academic researchers who frequently have little sense of the ultimate impact of their work on schools educational school psychologists can be expected to experience the rewards, and sometimes the disappointments as well, of participating in changing school procedures so that more competent, effective and healthy individuals are educated in the schools.

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